

female athletes will rarely bring up issues regarding diet or menstrual history, pertinent questions must be asked. It is often difficult to get an adequate history involving these sensitive issues simply by having an athlete answer a questionnaire. If possible, having a station where the athlete talks with a trainer, psychologist, or physician for a few minutes will elicit a more revealing history.

In addition, checking for subtle physical signs may identify an athlete who already has a disordered eating pattern. These athletes are not necessarily abnormally thin. They may have a decreased pulse rate of 40 to 50 beats per minute. Hypotension, hypothermia, lanugo hair, or a history of fainting can be clues to metabolic disturbances. Parotid swelling (chipmunk cheeks), erosion of tooth enamel or a large amount of dental work, and Russell's sign—finger and nail changes on the first and second digits of the dominant hand—are all signs of bulimia.

Rarely is an athlete excluded from participation for disordered eating or amenorrhea. Yet, these carry substantial possible consequences in psychiatric, endocrine, and skeletal well-being. If, as with other problems identified on an examination, athletes at risk for the triad are denied participation until further evaluation and treatment are initiated, the prognosis for recovery will be improved. It is important for physicians to encourage women to participate in sports in a healthy manner and to help eliminate the "win-at-all-costs" mentality.

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Diagnosing Tibial Stress Injuries in Athletes

AS MANY AS 10% of all injuries seen in sports medicine clinics are stress fractures. Running is the most common activity causing these injuries, and the tibia is the most frequent site of injury. The term stress fracture is, however, not appropriate for most tibial stress injuries. Most of the injuries traditionally classified as stress fractures show no evidence of a fracture line or break in the continuity of bone, but exhibit various degrees of bone remodeling and stress reaction.

Radiographs are not a sensitive indicator for bony stress injuries. Magnetic resonance imaging (MRI) has been found superior to isotope bone scanning for diagnosing the degree of tibial stress injuries in running athletes. Magnetic resonance imaging with the fat-suppression

technique can clearly identify four grades of tibial bony stress injury: periosteal inflammation associated with the shin splint syndrome, followed by progressive marrow edema, first on fat-suppressed T2-weighted images, then T1-weighted images, and ultimately a cortical stress fracture. Additional advantages of the use of MRI include its multiplanar capability, resulting in precise anatomic localization, lack of radiation exposure, and substantially less imaging time than triple-phase bone scan, although it is currently more costly.

Magnetic resonance imaging is recommended for grading tibial stress injuries in runners and other athletes to allow more accurate recommendations for rehabilitation and a return to impact activity. Athletes with a grade 1 stress injury can usually return to running on grass or soft dirt within three weeks and those with a grade 2 injury within six weeks. Those with grade 3 and 4 injuries are typically more symptomatic, with most having pain with daily ambulation. On physical examination, they have focal bone tenderness and increased pain with percussion, either directly over the involved bone or, in severe cases, at a distance from the site of pain. Athletes with a grade 3 injury are often unable to return to impact activity for 9 weeks and those with a grade 4 injury for at least 12 weeks.

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Alcohol Use and Traumatic Brain Injury

TRAUMATIC BRAIN INJURY and alcohol abuse are overlapping conditions that interact on several levels. Alcohol abuse, before and after injury, and the presence of alcohol in the blood ("positive blood alcohol level") at the time of the brain injury can complicate recovery. For these reasons it is important to screen for alcohol-related problems in patients with brain injuries and to use various motivational techniques described here to encourage survivors to abstain from alcohol for at least a year after injury.

Preexisting alcohol abuse is common among persons with traumatic brain injury, with as many as 58% reporting a history of alcohol abuse or dependence and 25% reporting previous treatment for substance abuse. Alcohol consumption data also suggest that persons with traumatic brain injury are more likely than their peers to have been heavy drinkers. Alcohol use is involved in many traumatic accidents, including those resulting in brain injury. One study showed that 46% of 2,657 trauma patients had a positive blood alcohol level at admission, 36% were

intoxicated (a blood alcohol level ≥ 22 nmol per liter [100 mg per dl]), and 75% of those who were intoxicated also admitted a longer history of alcohol problems. Alcohol intoxication resulted in a greater likelihood of intubation, intracranial pressure monitoring, respiratory distress, and pneumonia. A positive blood alcohol level has also been found to be associated with a longer duration of agitation and coma and a lower cognitive status at discharge. Although alcohol use frequently declines after these incidents, its use or abuse continues for many people and may result in important complications. Because alcohol may lower the seizure threshold, its use after traumatic brain injury is thought to increase the risk of posttraumatic seizures. The acute effects of alcohol intoxication also mimic the types of impairments found in frontal lobe damage, which is one of the most common patterns of traumatic brain injury. Therefore, even moderate alcohol use may magnify the residual effects on balance, reaction time, and complex concentration. This magnification of impairments may underlie the consistent finding that alcohol use is associated with recurrent brain injuries. Finally, there is evidence that returning to drinking slows the process of recovery after brain damage.

The practical value of this information for clinicians has to do with motivating patients to cut down the amount they use or abstain from alcohol for at least the first year after injury. In the early aftermath of traumatic injury, a window of opportunity exists for health care professionals to promote changes in substance use. Many alcohol researchers now acknowledge that we have underestimated the potential for self-change without formal treatment or with only simple advice. In this regard, even brief feedback (especially personally relevant feedback) and specific advice to cut down on alcohol use have been found to be effective in a controlled study of trauma patients. Motivation to change addictive behaviors seems to be enhanced when a clinician adopts a position of non-confrontation while eliciting the person's own concerns about alcohol use. This nonconfrontational style, called motivational interviewing, has been shown to reduce resistance to alcohol-related treatment. This approach seems especially appropriate for people who are not seeking help for alcohol problems and has been adapted for use in primary care practice.

The basic principles of motivational interviewing applied to patients with traumatic brain injury are as follows: Screen for a history of alcohol problems with measures such as the CAGE (Have you ever felt you ought to Cut down on your drinking? Have people Annoyed you by criticizing your drinking? Have you ever felt bad or Guilty about your drinking? Have you ever had a drink first thing in the morning [Eye opener] to steady your nerves or get rid of a hangover?) or the Short Michigan Alcoholism Screening Test; follow up on positive results in patients with specific questions about alcohol use such as "What kind of drinker are you?" "What kind of effect does alcohol have on you?" "On a typical Monday, how much will you have to drink?" "Over how many hours?"

"On a typical Tuesday?" Ask about health, then substance use. Tie comments about substance use to salient health concerns. Inquire about the subjective benefits of using alcohol or drugs, then the costs or adverse effects. Provide information and then ask, "What do you think?" Include information about specific risks related to traumatic brain injury. Provide this information to family or friends when possible. Make specific recommendations, but then leave the decision up to the patient. Ask the patient what is the next step or where he or she wants to go from here, and negotiate some means of checking on the patient's progress toward goals.

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Hemiplegic Shoulder Pain—Early Prevention and Rehabilitation

PREVENTION, EARLY DIAGNOSIS, and treatment of shoulder pain are important to reduce morbidity and, later, to improve the quality of life in patients who have hemiplegic upper extremities after a stroke.

Shoulder pain is a common problem and usually begins early during the course of recovery. The prevalence of shoulder pain in hemiplegic patients has been reported to vary between 16% and 80%. A broad differential diagnosis must be considered. Possible causes include soft tissue lesions such as rotator cuff or capsular tears, adhesive capsulitis, arthritis, fracture, heterotopic ossification, reflex sympathetic dystrophy, thalamic (central) pain, and pain due to cervical radiculopathy or disease in the brachial plexus. At times patients with carpal tunnel syndrome present with a history of shoulder pain. Subluxation of the humeral head does not by itself directly cause pain but may exert traction stress to the periarticular soft tissue with subsequent pain. Patients with neglect have been reported to have a higher incidence of pain in the hemiparetic shoulder.

Preventing shoulder pain should be a goal during the early recovery phase. Positioning of the hemiplegic limb and judicious range-of-motion exercises should be started within 24 hours after a stroke. A sling may be useful in supporting a flaccid arm when the patient is walking. The shoulder should be maintained in an abducted and externally rotated position. When the patient is seated, a forearm trough or a lapboard can be attached to the wheelchair to help prevent subluxation. It is imperative to avoid the downward gravitational pull of the humeral head by properly handling the upper extremity during